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ABSTRACT

This paper provides an overview of research and theory on within-class grouping for instruction, including how groups are formed and managed, how students interact in groups, and how grouping affects students' achievement, with particular concern for low-achieving students served by Chapter 1 of the Education Consolidation and Improvements Act of 1981. After reviewing the traditional theoretical approaches to the study of grouping in classrooms, the paper introduces a model that serves as a framework for integrating research on grouping, followed by a review of the major findings and issues in this literature. Finally, the following implications of the research for educating Chapter 1 students are given: (1) When assigning instruction groups, teachers must especially consider individual students' needs and characteristics. (2) Teachers should not be reluctant to reassign students to groups or alter the groups. (3) Homogeneous ability grouping is detrimental to learning of students assigned to low groups. (4) Heterogeneous ability, all-student groups and some variants to cooperative learning may be effective for both low- and high-achieving students. (5) Teachers should be knowledgeable about the variety of grouping practices and be able to use them. (6) Students should learn how to interact effectively in small groups. And, (7) instruction and assistance should be appropriate to the students' level and skills. An extensive list of references is appended. (PS)

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GROUPING LOW-ACHIEVING STUDENTS FOR INSTRUCTION

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GROUPING LOW-ACHIEVING STUDENTS FOR INSTRUCTION

Grouping for Instruction Within Classroom

Placing students in groups for instruction is a common practice in American classrooms, including those in which Chapter 1 students are instructed. Instructional groups led by the teacher are found in elementary schools and are used most often for reading instruction, and occasionally for mathematics; they are rarely used for other curricular areas. Some have argued that grouping students according to their ability for teacher-led instruction may be beneficial because it raises students' attentiveness and gives them more individualized instruction. Grouping students allows teachers to work with a smaller group of students that is homogeneous with respect to students' aptitude and their preparation for the academic material to be taught.

All-student groups that are not led by the teacher are also found in American classrooms. Prior to the interest in grouping for instruction, students were discouraged from interacting with each other. Talking during class time was regarded as disobedient behavior, even when students asked classmates questions about the lesson. Recently, teachers have been placing students in small groups for instruction in reading or mathematics; students work together individually on assignments. Research on these groups has shown that certain kinds of student interactions that occur within these all-student groups can be beneficial to learning.

This paper provides an overview of research and theory on within-class grouping for instruction, including how groups are formed and managed, how students interact in groups, and how grouping affects students' achievement, with particular concern for low-achieving, Chapter 1 students. After reviewing the traditional theoretical approaches to the study of grouping in classrooms, the paper introduces a model that serves as a framework for integrating research on grouping, followed by a review of the major findings and issues in this literature. Finally, the implications of the research for educating Chapter 1 students are given.

Theoretical Approaches to the Study of Classroom Grouping

Research on classroom groups has tended to follow one of four distinct traditions; sociological, sociolinguistic, process-product, and cooperative learning (Peterson, Wilkinson, & Hallinan, 1984). Sociological researchers have been concerned with the formation and assignment of students to groups, and the consequences of grouping patterns for students.

Sociolinguistic researchers have focused on the use of language in classrooms. Process-product researchers have studied processes of teacher-student interaction in an attempt to determine how those processes facilitate students' achievement. Finally, cooperative learning researchers have studied the effects of students' working together in small groups in which tasks and rewards are highly interdependent among students.

In addition to having distinct foci, the research traditions have differed in research methods. Sociologists have been interested in determining the basis for grouping patterns that exist within the school, and the extent to which the patterns encourage the differentiation of students in social status and educational level. This research often uses large-scale surveys. The variables studied typically include students' ability, social status, and achievement as measured by questionnaires and tests that are given to a large number of students and teachers. Statistical analyses such as multivariate regression are used to test the relationships among these variables. In general, sociological researchers have been concerned with organizational structures (e.g., classroom grouping patterns) and their effects on students' outcomes (e.g., achievement), but have given little attention to processes in the classroom that mediate these effects.

Cooperative learning researchers have studied variations in the ways that students work together to complete assignments and receive evaluations and rewards for their work. Slavin (1980) notes that the major types of cooperative learning techniques differ along five dimensions: the interdependence among students in working on the task and receiving rewards, the extent to which the teacher imposes structure on the assignment, the amount of competition between groups, and the extent to which individual students are accountable for their own work. Typically, in these studies, a particular cooperative learning technique is compared with a control group, within a school, and effects on students achievement are measured. Like the sociological researchers, those who investigate cooperative learning have concentrated on organizational structures (i.e., cooperative learning techniques) and their effects on student achievement.

In contrast, sociolinguists and process-product researchers have studied student-student and teacher-student interaction process directly and have examined their effects on students' outcomes. Sociolinguistic analyses consist primarily of descriptions of interactions in classrooms. Techniques of descriptive and observational research, such as naturalistic observation, linguistic field description, ethnography, and participant observation are often used. For example, some have studied teachers' and students' use of language in reading groups (e.g., Eder, 1982; Wilkinson & Calculator, 1982).

Some process-product researchers have typically investigated the effects of different patterns of instructional grouping on the processes that occur in instructional groups in the classroom (Good, 1981). Other process-product researchers have studied those cognitive components of classroom processes that facilitate students' achievement (e.g., Swing & Peterson, 1982). Recent research on assigning students to small groups and encouraging them to teach each other suggests that all-student groups may be particularly effective, at least for some kinds of students (Peterson & Janicki, 1979; Peterson, Janicki, & Swing, 1981; Swing & Peterson, 1982; Webb, 1982).

Integrating the Research on Classroom Grouping

Recently, we proposed a framework for integrating research on grouping for instruction in classrooms (Peterson, Wilkinson, & Hallinan, 1984). Figure IV-4 displays this model. The model shows the variables that have been addressed by previous research and theory: (a) student diversity; (b) variations in classroom organization; (c) teacher-student and student-student interactional processes; and (d) student outcomes. Hypothesized relationships among these variable are also shown.

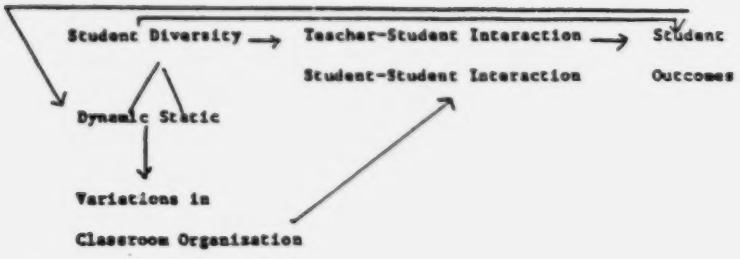

Figure IV-4. Model for Integrating Research on Classroom Groups

The model is interdisciplinary, because we believe that interdisciplinary and multidisciplinary perspectives can stimulate research addressing questions that have not been answered conclusively by existing research within any single tradition. For example, sociologists have studied the effects of ability grouping on students' achievement; yet after three decades, this research has been inconclusive (Sorenson, 1978). Understandings generated from sociolinguistic and process-product studies about mechanisms through which ability groups

have their effects may someday resolve the ambiguities in the sociological literature (Hallinan, 1984).

Our model can be understood by examining each of four variables, and by examining hypothesized relationships among these variables. Student diversity includes students' ethnicity, linguistic-cultural background, socioeconomic status, gender, age, ability, motivation, prior achievement, and personality. Student diversity consists of dynamic characteristics (those that can be changed) and static characteristics (those that cannot be changed). For example, dynamic characteristics include motivation and prior achievement, whereas static characteristics include gender and ethnicity.

Although researchers in all four traditions have considered student diversity, they have tended to focus on different aspects. Sociologists have tended to focus on measured ability and social status; whereas sociolinguists have considered ethnicity, language knowledge, gender, prior achievement, and attributed ability. Process-product and cooperative learning researchers, to the extent that they have considered student diversity, have focused primarily on student ability and prior achievement.

The second major variable, variations in the classroom organization, includes heterogeneous and homogeneous ability grouping in reading and mathematics, teacher-led instructional groups in reading and mathematics, and use of all-student groups in the classroom. There are variations in size, and composition of the group, and in the nature of the task and reward structure, such as the degree of interdependence among students. Another important variation is whether the group is student-led or teacher-led.

The third variable, teacher-student and student-student interactional processes, includes the type of explaining given by the students and by the teacher in small groups, the kinds of requests for information and action used by students, and the amount of time a student is on-task or engaged in learning.

The fourth variable, student outcomes, includes scores on standardized achievement tests in reading and mathematics, and students' daily achievement as measured by grades on daily assignments, and tests that are constructed by teachers. Affective and social outcomes such as students' social skills and motivation are also included in this category of variables.

The arrows in the model designate hypothesized relationships among the variable. Both student diversity and variations in classroom organization are hypothesized to affect the quality, amount, and kind of teacher-student and student-student interactions that occur in classrooms, which, in turn,

mediate between student diversity and student outcomes and also between variations in classroom organization and student outcomes. This latter relationship makes the model a recursive, since student diversity is a potential cause of variation in students' outcomes, such as achievement, motivation and social skills, and student diversity is in turn affected by students achievement, motivation, and social skills.

Major Research Findings and Issues

Instructional grouping in classrooms is a common practice in American schools, particularly at the elementary level for reading and mathematics. Despite the prevalence of this practice, research on within-class grouping is limited, and research specific to Title I students does not exist. Two key issues have emerged from the extant research and will guide this review: (1) the bases on which students are assigned to groups, including the formation and stability of groups; and (2) the patterns of consequences for students of interactional processes in instructional groups.

Bases and Formation of Instructional groups

This issue is linked to variations in classroom organization in our model and includes the effects on student diversity. The most common basis for within-class grouping is student ability, and there is substantial evidence to support the conclusion that the teachers' goal is to create and maintain instructional groups that are homogeneous with respect to student's ability (Hallinan, 1984). When teachers vary the composition of instructional groups with respect of other student characteristics, such as ethnicity, they seem to do so without abandoning the homogeneous ability group (Hallinan, 1984). Groups that are heterogeneous with respect to ability are seldom reported or studied.

For example, Hallinan and Sorenson (1984) studied the role of race in within-classroom ability group assignments in fourth through seventh grades. The data showed that while racial composition of classrooms did effect the formation of ability groups, race in itself was not a criterion for assigning students to ability groups. Teachers used achievement tests as criteria, but also used recommendations and prompting from parents and other teachers. Since parents of lower SES tend to be less involved in the process of schooling than middle and upper SES parents, and since Blacks are highly represented in lower SES, one would have expected students' race to have an influence on teachers' formation of instructional groups.

Teachers apparently used results from the tests differently for Black and White students in forming groups.

Hallinan and Sorenson (1984) also report that students had a higher probability of being assigned to a high-ability group in lower grades. A direct implication of this finding is that grade level does effect grouping assignments and, possibly, the effectiveness of group functioning. While for some students, being involved in a higher-ability group at an earlier age may be a motivation for others, their inclusion in a high-ability group may be intimidating and therefore inappropriate. This tendency may initiate a cycle of low involvement in school and declining achievement.

In practice, factors other than individual students' ability or academic achievement appear to determine teachers' assignment of students to ability groups. Dreeban (1984) has argued that ability grouping within classes is a logical response to the problem of how to transform a classroom of diverse students into suitable units for instruction. He reports that factors affecting the assignment of students to within-class ability groups include the following: the distribution of student aptitudes or achievement in the school or classroom, organizational constraints within the school or classroom, and student management and discipline. Teachers consider the number, size, and diversity of students within groups when assigning them to groups in their classrooms.

Dreeban (1984) reports that the number of within-classroom groups can be predicted by: the size of the class, availability of materials, preparation of lesson plans, and the teachers' difficulty of simultaneously supervising many groups while instructing only one. Generally, if the class is large and consists of students who vary widely in ability and achievement, teachers form at least three groups. Availability of materials for instruction and concern about discipline of students dictate the size of groups, so that there may be groups of unequal sizes within one classroom. Groups that have been formed on the basis of one student characteristic, such as ability, may vary widely on other dimensions, and yet, instruction is geared to the level of ability attributed to the group.

Thus, while instruction appears to be closely linked to patterns of within-class grouping, learning may not be so clearly associated. Membership in reading groups, has been found to be fairly stable after the first month of school (Eder, 1982; Groff, 1962; Hawkins, 1966; Weinstein, 1976; Wilkinson & Calculator, 1982; Wilkinson & Spinelli, 1983). This tendency towards permanent assignments is not confined to elementary school (Hallinan, 1984). Rosenbaum (1980) provides evidence that ability groups at the junior high and high school

levels tend to endure for relatively long periods of time, and mobility seems to be only downward.

The implications of this research for low achievers direct our concern to the initial assignment and apparent endurance of ability groups. Some research suggests that grade level effects group assignment and possibly group effectiveness. The developmental level of students needs to be considered by teachers when they form groups. Students should be reassigned to different ability groups, higher or lower, if their achievement indicates it during the school year. Individual students' learning may be maximized when groups change frequently or divide often. When forming groups, teachers should overtly consider students' needs and strengths first, even as they are cognizant of situational constraints. Labeling students as members of low-ability groups, in the case of homogeneous grouping, could be detrimental to students' self-esteem. This practice may initiate a cycle of self-fulfilling prophecies by both students and teachers that would result in continued under-achievement.

Patterns and Consequences of Interactional Processes

This issue is linked to teacher-student and student-student interactional processes, including possible effects of student outcomes. Researchers from the sociolinguistic and process-product research traditions have studied the processes that occur within ability groups. There is substantial evidence that the interactional processes within groups, between students and teachers and among students themselves, differ widely across ability groups, with a decidedly negative learning environment often occurring in the homogeneous low-ability groups. This environment is associated with negative outcomes in achievement for low-ability students. These findings are particularly troubling since the most frequent practice with Title I students is to pull them out of their regular classes for special instruction in reading and math.

Research from the cooperative learning literature, which focuses on the relationship between variations in classroom organization and student outcomes (while ignoring the mediating effects of interactional processes) does not show uniformly negative findings for grouping of low-ability students. In fact, some positive outcomes are noted for the learning of low-ability students. First we will consider the findings from the sociolinguistic and process product traditions, divided into two sections, one that focuses on teacher-led homogeneous reading ability groups, and one that focuses on all-student, heterogeneous ability groups in mathematics. Then we will consider the cooperative learning studies.

Homogeneous ability groups that are led by the teacher. It is helpful to consider the kind of groups that has been prevalent and has been studied in elementary schools: the homogeneous reading ability group. Reading groups are unique in their task orientation and organization since they cannot be classified as either cooperative (shared goal, interdependent) or competitive (individual goal, independent, one "winner" only). Instead, the groups are organized around individual tasks, with each student usually having the same task in the group, yet students are encouraged to be cooperative and help each other so that all students complete the task. Rewards are individually distributed, yet one student's receiving a reward does not preclude another student's receiving a reward also, as it would in a competitive model. In addition to individual rewards, the group may be reprimanded or rewarded as a whole for its behavior (Wilkinson, Clevenger, & Dollaghan, 1982).

In elementary school, research shows that students in homogeneous low-ability reading groups fare poorly. Students in low groups receive less time to read in comparison with students in high groups; oral reading errors made by lows are more frequently corrected than those made by highs (i.e., they are interrupted more frequently); lows are given more instruction in decoding and teacher prompts are more focused on phonics for lows than for highs; lows are frequently less attentive than highs (Allington, 1980; Eder, 1981, 1982, 1983, and 1984; Good & Marshall, 1984; Rist, 1970; Stern & Shavelson, 1981).

Eder (1981) argues that these practices result in lower reading-test performance and lower oral-reading grades for the low-ability groups. The poor achievement of the lows is thus the result of low expectations by the teachers and/or the poor quality of teaching that they receive. At first glance, these studies suggest that the differential treatment received by the low-ability students is the culprit, the cause of their poor reading achievement.

In another study, Eder and Felmlee (1984) examined developing attentional norms in homogeneous ability groups. They found that the lower groups seemed to have more difficulty staying on task and were easily distracted by other students. In comparison, students in high-ability groups seemed to tract the task at hand conscientiously and punish fellow group members who wandered off the task.

The implications for low-achieving students seem clear: homogeneous ability grouping is detrimental to learning for students assigned to low groups (Eash, 1961; Persell, 1977). Studies reveal mechanisms through which the negative effect of assignment to a low-ability group occurs. There are differences in the instructional processes and learning environments

of different ability groups. Teachers and students interact in different ways across ability groups. We are compelled to agree with Hallinan's (1984) conclusion that the majority of studies show that assignment to a low-ability group places students at a disadvantage because of diminished opportunities to learn.

However, we must also consider another possible interpretation of the data from these studies: That the low-ability students are, in fact, receiving appropriate instruction, given their level of performance and achievement (Alpert, 1975). Aside from the finding that low readers received less time in reading instruction than did high-ability readers, all of the other aspects of teaching methods used in the low reading ability groups noted in these studies could be justified by the students' poor reading skills. Low-ability students may need the kind of instruction that has been observed in order to progress to higher levels of reading skills. For example, low-ability readers tend not to apply phonic pattern information when reading, and they make more misleading oral reading errors, resulting in distortion of text meaning. Their errors indicate little or no attention to linguistic patterns, thus reflecting a lack of skill to decode unknown words by applying phonic pattern information (Calfee & Drum, 1986). Teachers' attention to phonics and errors may, in fact, not be detrimental to poor readers who are attempting to acquire reading skill.

Heterogeneous ability groups that are not led by the teacher; all-student groups. There have been several studies examining all-student interaction within heterogeneous (mixed ability level) groups, primarily for mathematics instruction, and in one case, for homogeneous reading ability groups. By and large, the data from elementary and secondary school populations are remarkably consistent. Low-ability students seem to benefit in achievement by being placed in small, heterogeneous ability groups. In addition, some data show that both high and low-ability students obtain higher achievement after working together within heterogeneous groups.

For example, Swing and Peterson (1982) studied fifth-grade students, who were divided into heterogeneous ability level groups (each group consisting of one high-ability student, two medium-ability students, and one low-ability student). The students were taught how to interact with other students on-task and how to improve their skill at providing explanations to other students. Subsequently, the students' interactions with each other were studied as they completed their seatwork during mathematics class; their achievement was measured. The data showed that certain students' behaviors were positively related to achievement: (1) for the low-ability students, these included receiving procedural, and

conceptual-sequencing explanations; greater participation in task-related activity, and greater answer checking; (2) for the high-ability students, these included providing conceptual-sequencing explanations, and these students tended to give more procedural explanations and participate in more task-related activities. Medium-ability students did not show positive relationships between interactional behaviors and achievement.

The implications of this study for low-ability students are clear. Their achievement can be enhanced by eliciting student responses, providing feedback, and tightly organizing material. Swing and Peterson (1982) believe that these less mature learners need more regulation by others to guide and monitor their progress through the steps necessary to complete the assignment. To the extent that small-group learning experiences, such as the one reported here, can provide low-ability students with what they need to support their learning (e.g., involvement in the task, active learning, and opportunities for providing and receiving conceptual sequencing explanations), then they should be used.

Swing and Peterson (1982), and other studies (e.g., Cohen, 1984; Webb, 1982, 1985; Webb & Kenderski, 1984; Peterson, Wilkinson, Spinelli, & Swing, 1984) provide evidence that small, heterogeneous ability group can provide learning environments that are positive for learning, at least for some students. Other examples include Peterson, Wilkinson, Spinelli, and Swing's (1984) study, in which we identified students who acted as "task-masters" and served as models for pacing and managing time efficiently in order to complete the task. These students provided managerial explanations, made procedural requests, provided answers to questions, and engaged in answer checking, which appeared to increase their own motivation to complete their work, with the eventual result of increasing their own achievement. Peterson (1986) has concluded that students can learn effectively in small cooperative groups because they become actively involved in learning rather than just passively receiving information.

Cohen's (1984) research provides cause for concern about the relative opportunities for low achievers to actively participate in small-group experiences that facilitate learning. She examined the relationship among students' status, interactions and achievement, in a population of bilingual elementary school students. Her findings show that these factors are interrelated. The more the students talked and worked together, the more they learned from the curriculum. The implications from Cohen's study are not all rosy, however, since the most popular and attractive children also had high status in the class and were most often asked for help. The ordering of students according to their social status was thus maintained and perhaps even enhanced in this type of learning

environment. The findings of Lindow, Wilkinson, and Peterson (1985) also show that low-ability students had fewer opportunities to demonstrate to other group members what they did know, and thus had fewer opportunities to receive feedback on the adequacy of their knowledge. A related series of studies of elementary reading and mathematics groups provides evidence that low-ability students remain low achievers throughout the school year, and show a lack of skill at requesting and providing needed information during seatwork (Wilkinson & Calculator, 1982; Wilkinson & Spinelli, 1983; Wilkinson & Genishi, 1986). All-student heterogeneous groups may serve to maintain the status quo, unless teachers intervene to change the nature of the interactional processes in the direction that is beneficial for all students.

Cooperative learning studies: Slavin (1980) provides a comprehensive review of research on specific cooperative learning techniques, another approach to within-class grouping. In cooperative learning techniques, students work in small groups and receive rewards or recognition based on their group performance. The techniques are not as common in classrooms as traditional, teacher-led elementary reading groups. He reviewed 28 field studies that provide several instances of the major cooperative learning techniques. Although it is difficult to make direct comparisons about the efficacy of each technique, since each was compared with a control group rather than to another technique, the findings show some consistency. Overall, there is evidence that cooperative techniques show positive effects on academic achievement, but these effects are fully dependent on the particular settings, measures, designs, and populations. Slavin does make an inference about comparisons across techniques by combining evidence from the Small Group Teaching (SGT) study and the overall finding that Student Games Tournament (TGT) and Student Teams Achievement Division (STAD) and other techniques with high reward interdependence appear to be more effective on academic achievement than techniques with lower reward interdependence.

Sharan (1980) found that the Small Group Teaching program was superior to the control group in affecting only higher-order cognitive skills, such as concept identification. Slavin points out that the types of instruments used to measure academic achievement in many of the studies place greater emphasis on the basic skills than higher-order skills. Thus, one interpretation of these data is that when team structures are used to motivate students toward a reward, as in TGT or STAD, the students review the assignment until every student has mastered it. Team structures in this case, then, do not foster the combining of individual contributions, and this may be effective when the academic goal is the learning of basic skills. However, team structures can be used to facilitate

mastery of higher-order skills, as in the SGT approach, when students are encouraged to share ideas.

Cooperative learning techniques also appear to have a positive effect on race relations, as shown by greater cross-racial choice of friends among students. In addition, some studies suggest an interaction between ethnicity and treatment, because minority students appear to gain academically as a result of participating in cooperative learning more than do White, middle-class students.

In sharp contrast with the sociological, sociolinguistic and process-product findings, students do not seem to be at a disadvantage when they participate in cooperative learning. In fact, cooperative learning may be a better environment (compared with traditional approaches) for teaching basic skills, as long as there is a structured and highly focused schedule of instruction, individual accountability among student team members, and a well-defined group reward structure. For mastery of higher-order skills, less structured techniques such as SGT may be more effective than traditional approaches.

The implications for low-achieving students seem clear. To the degree that a student's low ability is function of a lack of basic skills, cooperative learning techniques such as TGT and STAD are likely to improve that student's academic functioning. If students' low achievement stems from deficits in higher-order cognitive processing, techniques such as SGT may be an improvement over traditional, individual or whole-class instruction.

Once again, there is a concern about the developmental level of students. A justifiable inference from the literature is that young low-ability students have a better chance of succeeding academically in structured, well-focused cooperative learning situations, with high levels of reward and/or task interdependence, and high levels of individual accountability. For older low-ability students, the situation is more complex. The ideal cooperative technique would be one that emphasizes both basic skills and concept development.

Conclusions and Implications

One conclusion is easily drawn from this review: The research literature on within-class instructional grouping is not as complete as we would like to guide policy and practice. Cautiously, we will summarize the implications of the extant literature, keeping in mind that policy makers and practitioners are searching for ways to better implement Chapter 1. Carter (1984) has observed that since Chapter 1 is administered as a poverty-based program at the school level, many low-

achieving, disadvantaged students are unserved by the program. He also provides evidence that many moderately disadvantaged, underachieving students benefited the most from Chapter 1 services in the past. Grouping students for instruction with Chapter 1 classes may be a useful educational practice to stimulate the learning of low-achieving, disadvantaged students. We suggest the following implications drawn from the research reviewed in this paper.

1. Teachers need to consider many factors when they assign students to instructional groups, but most importantly, individual students' needs and characteristics, such as their developmental level. This is particularly important in the early elementary years, since some research suggests that young low-ability students can fare well in academically structured, focused cooperative learning situations, with high levels of reward and/or task interdependence, and high levels of individual accountability.

2. Teachers should not be reluctant to reassign students to groups and even alter the groups themselves. Students change, and classrooms are in flux throughout the school year. Groups should be changed, added, deleted, as indicated. Most importantly, teachers should reassign students to different groups, if that is appropriate for the students.

3. Homogeneous ability grouping is detrimental to learning of students assigned to low groups, a consequence of the prevalent pullout practice in the way Title I has been implemented in classrooms.

4. Heterogeneous ability, all-student groups and some variants of cooperative learning may be effective in providing low- and high-achieving students opportunities to learn, since they allow students to become actively involved in the learning process.

5. Teachers should be knowledgeable about the variety of grouping practices and be able to use them in their classes when they believe that it would be helpful to students' learning. Although the use of some of these techniques may be costly and at first, difficult to implement, educational administrators should provide resources for these practices. In particular, teachers should be cognizant of both the intended and unintended consequences of using groups in their classrooms. Low-achieving students often do not have the same opportunities to interact in heterogeneous ability all student groups, unless the teacher monitors the group interaction and intervenes

so the distribution of opportunities to learn is equitable.

6. It may be desirable to teach students how to interact effectively in small groups so that when groups are used in classrooms, students learn both cognitive and social skills. For example, Peterson, Wilkinson, Spinelli, and Swing (1984), identified "task-master," who managed their time efficiently in order to complete the task, and they gave explanations, made procedural requests, provided answers to questions, and engaged in answer checking, which appeared to increase their own motivation to complete their work, with the eventual result of increasing their own achievement. Teaching these skills to students may help them to profit from instructional groups.

7. The quality of instruction provided by the teacher and the assistance provided by other students should be appropriate to the students' level and skills and should stimulate the learning of low achievers. Attaining equity for all students in classrooms is a difficult goal, since educational resources are limited. However, an appropriate use of instructional groups in classrooms is to provide more opportunities for low-achieving students to practice their skills and develop their knowledge than would be the case in a more traditional, whole-class format.

In conclusion, within-class grouping of students for instruction is neither the savior nor the culprit that some believe it to be. The concept refers to a variety of educational practices, some of which have been prevalent in American classrooms, and some of which must be regarded as experimental. Grouping may be used to increase achievement and address individual differences by providing differential instructional methods. Without further research, however, important questions about the consequences of grouping will remain unanswered.

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